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ABSTRACT

This report identifies local factors that foster rural economic growth. A review of the literature revealed potential indicators of county economic growth, and those indicators were then tested against data for nonmetro counties during the 1980s using multiple regression analysis. The principal variables examined included demographic and labor market factors, education levels and activity, local taxes and expenditures, transportation access, business and banking structure, amenities, relationship to metro areas, and economic base. Factors related to local and regional economic growth (improved county earnings) were attractiveness to retirees, right-to-work laws, excellent high school completion rates, good public education expenditures, and access to transportation networks. Factors associated with poor earnings growth included high wage levels, high concentrations of transfer-payment recipients, high concentrations of small independent businesses in the goods-producing sector, and high concentrations of African Americans. The mix of industries active in a county was also strongly associated with county earnings. In the 1990s, nonmetro counties in general experienced greater real earnings growth, and some of the factors associated with stronger or weaker growth may have become less powerful. (SV)

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Rural Economic Development

What Makes Rural Communities Grow?

Lorna Aldrich and Lorin Kusmin

Factors related to local and regional economic growth are attractiveness to retirees, right-to-work laws, excellent high school completion rates, good public education expenditures, and access to transportation networks. These were associated with improved county earnings in 1979-89, according to a multiple regression analysis of rural counties. Factors associated with poor earnings growth included higher wage levels, concentrations of transfer-payment recipiency, and concentrations of small independent businesses in the goods-producing sector. Counties with higher concentrations of African-Americans also experienced slowed earnings growth, although the reasons for that association cannot be identified from this analysis. The mix of industries active in a county was also strongly associated with county earnings. In the 1990's, nonmetro counties in general have experienced greater real earnings growth, and some of the factors associated with stronger or weaker earnings growth may have become less powerful.

Keywords: Counties, rural, nonmetropolitan, regional, economic growth, earnings, economic development

Researchers and development professionals have attempted to identify local factors that foster economic growth. Some factors are unique to a particular time or place—for example, industries experiencing a boom because their products are in increasing demand. But are there other local factors that will foster growth over long periods? Such indicators would give program administrators—whether local, State, or national—more realistic expectations for results from development efforts.

This report summarizes an Economic Research Service analysis, which reviewed the research literature on potential indicators of county economic growth, and then tested those indicators against data for nonmetro counties during the 1980's.

Recent research on county economic development found some factors that were consistently associated with rural growth in the 1980's, when tested by a variety of statistical methods. The factors included low initial labor costs (earnings per job), retirement county status, high education spending per pupil, and the presence of a passenger service airport within 50 miles. Some other factors were consistently associated with lagging growth. These were relatively large transfer payments to county residents and the relative size of the African-American population.[1] Other factors positively associated with rural growth, when the preferred statistical methods were used, included State right-to-work laws, the percentage of adults who had completed high school, and access to the interstate highway system. The factors considered in the study account for about 40 percent of the variation in earnings growth among counties.

Knowing the role of these factors helps development officials gauge whether the current is running with or against them. However, the presence of substantial unexplained variations means specific local strategies and strengths, as well as less quantifiable factors, are also important. Having favorable circumstances does not necessarily ensure strong economic growth.

Evidence From the Literature

An ERS review (Kusmin, 1994) examined the economic and social science literature that attempted to explain regional differences in economic growth and industrial location, concentrating on literature that appeared just before, during, or just after the 1980's. The review covered 35 studies and identified 24 factors that may affect rural economic growth (table 1).

Each of the factors in table 1 reflects a partial story about the process of economic growth and development. Business motivation appears to be at the center of most of the stories, consistent with the fact that most jobs are in the private sector. The tax and spending variables reflect the idea that government can create a business-friendly environment that can contribute to economic growth. In general, factors considered in the literature reflect a belief that businesses favor locations that have attributes

[1] Transfer payments are cash or goods that people receive from government for which no work is currently performed. Examples include Social Security, public assistance, and unemployment compensation.

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Table 1 -- Factors that may affect rural economic growth

Policy factors
* Taxation
* Public spending
* Public capital stocks
* Branch banking laws
* Availability of industrial-revenue bond financing
Other factors
* Wage levels
* Unionization levels
* Unemployment levels
* Labor force quality (measured by education)
* Proximity to higher education institution
* Access to highways, airports, and other transportation
* Proximity to metropolitan area
* Per capita or family income
* Population size and density
* Urbanization
* Minority population concentration
* Temperature and precipitation
* Energy prices
* Industry mix or concentration
* Availability and price of land
* Labor productivity
* Local fire protection ratings
* Small business activity measures
* Population age distribution measures

Source: Compiled from Kusmin (1994), pp 16-21.

such as low taxation, good public capital stock (buildings, sewers, roads, etc.), easy access to financing through favorable banking laws, and finance assistance through bonds. The expected effects of public spending depend on the nature of that spending, whether for programs such as road building and maintenance that have obvious benefits for business, or for parks, social services, and other programs with less clear benefits for business.

The nonpolicy variables reflect a variety of growth explanations, still mostly about favorable business conditions. Businesses are believed to prefer educated labor at low cost and to avoid union restrictions when possible. Low land prices, low energy prices, fire protection, and access to transportation further seem to enhance business environments.

A slightly different explanation for rural growth is one that focuses on what are called "agglomeration" effects. These represent synergy from the interaction of people with technical information, plus concentration of input suppliers and business services in one area. Indicators of agglomeration effects include population size, urbanization, proximity to a higher education institution, and industry mix or concentration.

Other possible factors facilitating economic growth were less well represented in the literature reviewed. These included the quality of life in a location and the strength of local demand for goods and services. Temperature and precipitation, population age distribution, land prices, proximity to a metropolitan area, or the presence of a university all represent aspects of quality of life. Several of these will also affect the strength of local economic demand. The last three variables have also been suggested as factors keeping business costs low or providing agglomerative advantages.

In fact, the difficulty of assigning a single interpretation to the effects of any particular variable makes interpretation of the literature difficult. Further, the studies reviewed in the literature differed in their units of analysis — using States, counties, or other substate areas to examine growth and business location. Different subsets of variables were included in each study. Finally, the studies varied considerably in the methods they used. The literature review concluded that results varied too much across studies to allow broad conclusions about the effects on rural economic growth of factors drawn from the literature.

The ERS Empirical Study

Finding that the existing literature did not yield clear, generally applicable conclusions about rural areas, ERS conducted a statistical study of rural economic growth that took into account most of the factors suggested by the literature (table 2). Factors examined in the study included employment in each of 75 industries and in 7 occupational categories, as well as about 30 other factors.

The ERS analysis tested the association of each of these factors with total earnings growth at the county level during 1979-89, where total earnings equals the product of the size of the labor force and the wage level (average earnings per job). Thus, this variable captured growth through higher wages, increased employment, or both.[2] Using rates of growth meant that large and small counties were weighted equally in the results.

The occupational and industrial variables in the ERS study controlled for specific economic trends in the 1980's, the period of study. The study focused primarily on the other factors. The study grouped variables into demographic factors, labor market factors, education levels and activity, local taxes and expenditures, transportation access, industry and banking structure, amenities, relationship to metropolitan areas, and the economic base. This list of variables primarily reflects the same business motivation perspective as the general literature, since it was based on that literature, but with a little more emphasis on quality-of-life factors. Four statistical methods of gradually increasing statistical rigor were used.

The study uncovered evidence on characteristics of rural areas conducive to economic growth. Among the major findings for the 1979-89 period were:

- Earnings in retirement counties grew 4.5 percentage points more than earnings in other counties.

[2]The growth rate was expressed in logarithmic form, as follows: 100* [log(1989 RLPI) - log(1979 RLPI)], where RLPI is real labor and proprietor income by place of work. For the nonmetro U.S. as a whole, the value of this index was 3.1 points, corresponding to a total growth of real income of just 3.1 percent. Because counties with smaller economies fared worse over the period, the mean value of the index when each county was weighted equally was -1.4 points. However, there was wide variation around these averages. The standard deviation of the growth index was 25.8 points; and of the 2,346 counties covered in the analysis, 100 experienced earnings growth of 50 percent or more in 1979-89, while 18 experienced decreases of 50 percent or more.

• Counties where a higher percentage of the population was African-American experienced slower earnings growth. A 10-percentage-point difference in the African-American share of the county population was associated with a 1.9-percentage-point difference in cumulative earnings growth.

• Earnings growth rates were significantly lower in areas with higher wage levels. A 10-percentage-point difference in earnings per job was associated with a 2.35-percentage-point difference in total earnings growth over 10 years.

• Earnings growth was greater in rural counties covered by State right-to-work laws. The estimated effect of these laws was a 5.2-percentage-point difference in earnings growth.

• Economic growth was greater in counties with a more-educated population. A difference of 10 percentage points in the high school completion rate among adults was associated with a difference of 3.3 percentage points in total earnings growth.

• Greater public education expenditures were conducive to higher earnings growth. An additional $1,000 in annual per-pupil expenditures was associated with an additional 3.8 percentage points in growth.

• Counties that had an airport with scheduled passenger service within 50 miles experienced 3.4 percentage points in additional earnings growth.

• Access to interstate highway interchanges contributed to earnings growth in rural areas. Each such interchange within a county was associated with 0.42 percentage point in additional growth during the period.

• Earnings growth was lower in counties where a higher percentage of the goods-producing business establishments were small (fewer than 20 employees) and independent. A county could expect a reduction of 1.1 percentage points in earnings growth over the decade if 80 percent rather than 70 percent of all county goods-producing business establishments were small independent businesses.

• An additional $100 in transfer payments per capita was associated with a 1.6-percentage-point reduction in cumulative earnings growth.

• Industry structure was an important determinant of county earnings growth. Counties experienced significantly greater earnings growth if they had higher concentrations of employment in transport services, real estate, hotels, miscellaneous business services, education services, or State and local government. Among industries negatively associated with growth were forestry, metal mining, oil and gas extraction, coal mining, heavy construction, lumber and wood products, primary metal manufacturing, electrical machinery manufacturing, and railroads.

• Some variables yielded little or no evidence of a significant relationship with earnings growth. These variables include total population of nearby metro areas, urban population within the county itself, presence of an airport within the county itself, presence of an intersection of two major highways within the county, population aged 25 to 64, labor force participation, college completion rate, high school dropout rate, local tax level, liberal branch banking laws, and topography.

• Past growth rates had a very modest effect on 1979-89 growth rates.

The results are further summarized in table 2.

Regression Analysis

Regression analysis is a statistical technique that can be used to describe the relationship between a single dependent variable (county earnings growth in the current study) and multiple independent variables (for example, education levels, tax rates, or indices of public policy). It permits assessment of the strength of the relationship between the dependent variable and any one independent variable, after taking into account the effects of all other independent variables. The technique identifies association, but does not necessarily identify cause and effect. The study reports results for four forms of regression analysis, each successively controlling for more potential statistical problems.

As is common, the estimated strength of the relationship between the independent variables and the dependent variable in this study is not the same in all four regression analyses. The variables emphasized in this report include those that were identified as statistically significant by the most rigorous of the four analyses, with additional emphasis on those that were estimated to have strong relationships with the dependent variable by all four techniques.

Rural Economic Growth in the 1990's

The above discussion concerns factors associated with rural economic growth in the 1980's. While a comparable analysis is not available for the 1990's, it may still be instructive to compare some general features of rural growth in the 1990's with rural growth in the 1980's.

Overall, rural economies in the first half of the 1990's fared much better than they did during the 1980's (fig. 1). While a majority of nonmetro counties experienced real earnings declines during 1979-89, more than 80 percent saw real earnings growth during 1989-94. Earnings in the median rural county grew at an annual rate of about 2 percent over the latter period. More than 240 rural counties had annual earnings growth of more than 5 percent in 1989-94, compared with fewer than 100 in 1979-89. However, the dispersion among nonmetro counties in the range of growth rates was quite similar in the two periods, with a standard deviation of the annual growth rate of about 2.6 percent for 1979-89 and 2.9 percent for 1989-94.

Table 2--Principal variables and findings from the ERS study

Variables in model	Hypotheses	Expected effect	Actual result [1]
Demographic factors			
Total urban population	Agglomeration economies associated with larger urban populations could lead to more growth	+	
Percent African-American	Bias or other factors could lead to slower growth; declining bias over the period could yield faster growth	- or +	--
Percent Hispanic	Bias, language barriers, or other factors could lead to slower growth; declining bias over the period could yield faster growth	- or +	
Retirement county	Consumer demand and amenities associated with retirement counties should lead to more growth	+	++
Percent of population age 25-64	A relatively large working-age population could provide a foundation for more growth	+	
Labor market factors			
Mean annual earnings per job	Higher wages are likely to deter businesses and slow business growth, but may attract immigration	- or +	--
Right-to-work law	Businesses are more likely to locate and/or grow in areas where they are less constrained by union power	+	+
Labor force participation rate	Areas with a lower labor force participation rate have a larger pool of potential workers and could grow faster	+	
Education levels and activity			
Percent high school graduates	As the relative demand for more highly educated workers increased over the 1980's, areas with a better educated workforce are likely to have seen faster growth	+	+
Percent college graduates	Same as above	+	
Percent dropouts (age 16-19)	Same as above	-	
Local college enrollment	Amenities associated with college communities, as well as the availability of workers with specialized skills, suggest that areas with higher local college enrollments may experience faster growth	+	
Local taxes and expenditures			
Local tax level	Businesses and workers are likely to avoid high-tax areas unless those taxes pay for specific services that they desire	- or +	
Education spending per pupil	Higher levels of education spending may improve workforce quality and may also attract employers whose workforce is sensitive to quality-of-life concerns	+	++

Continued . . .

Table 2--Principal variables and findings from the ERS study (continued)

Variables in model	Hypotheses	Expected effect	Actual result[1]
Transportation access			
Highway interchanges	Businesses are more likely to locate and prosper in areas with better access to markets	+	+
Highway intersections	Same as above	+	
Airport in county	Same as above	+	
Airport within 50 miles	Same as above	+	++
Business and banking structure			
Small businesses as percent of all businesses in:			
Goods-producing industries	This ratio may be associated with faster growth if small businesses are primary sources for job growth	+	-
Producer service industries	Same as above	+	
Other service industries	Same as above	+	
Branch banking law	More liberal branch banking laws may stimulate growth by increasing access to capital, or may retard growth by drawing capital out of rural areas	+ or -	
Amenities			
Climate quality index	Areas with a more attractive quality of life should experience more earnings growth, by drawing both non-economic immigrants and employers seeking to attract qualified, geographically mobile workers	+	++
Topography (mountainousness) index	Same as above	+	
Water coverage index	Same as above	+	
Relationship to metro areas			
Population of metro areas within 50 miles	Ready access to major input and output markets should be associated with faster growth	+	
Economic base			
Transfer payments	Transfer payments are likely to be economically stabilizing because they do not decline during economic downturns, and might foster faster growth if stability is attractive to businesses or individual immigrants	+	--
Industrial diversification index	May be associated with faster growth if businesses or individuals are attracted by greater economic stability, or if interindustry linkages foster growth	+	

1/ ++ or -- This variable was found to be statistically significant under most assumptions considered in the ERS analysis of 1980's growth and, in particular, under the most rigorous applicable set of assumptions.

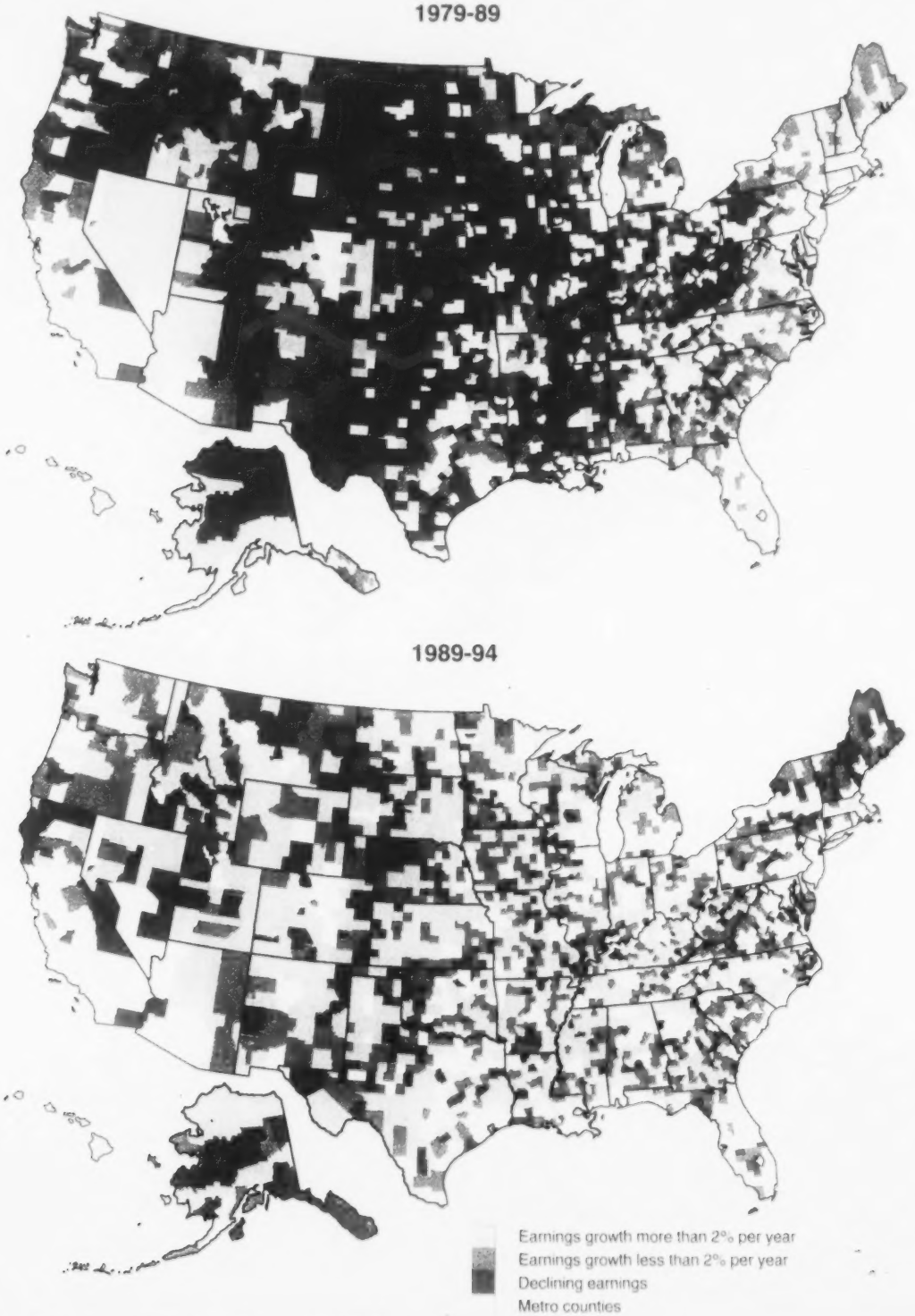
+ or - This variable was found to be statistically significant under the most rigorous applicable set of assumptions, but was not consistently significant across alternative assumptions.

Source: Compiled by USDA/ERS from Kusmin, Redman, and Sears (1996).

Figure 1

Nonmetro earnings growth rates by county

While rural economies in many areas declined during the 1980's, economic growth in rural areas was far more widespread during the first half of the 1990's



Note: Earnings growth rates shown are after adjustment for inflation.
Source: Calculated by ERS using data from the Bureau of Economic Analysis.

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Favorable growth in the 1990's has narrowed or eliminated the differences between certain categories of counties and the nonmetro average. During the 1980's, retirement counties led others in both employment growth and growth in earnings per job. In the 1990's, the growth gap in employment narrowed and the growth gap in earnings per job nearly disappeared (Kusmin, Redman, and Sears, 1996, pages 60 and 63). Additionally, the growth rates for employment and earnings per job in transfer-payment-dependent counties matched the average nonmetro county's rates in the 1990's after lagging in the 1980's.

The 1990's have been different in other ways. Nonmetro counties adjacent to metro counties outperformed other nonmetro counties in the 1980's; however, this difference largely disappeared in the 1990's.

Conclusions

Local areas that are attractive places to live for noneconomic reasons, that have low labor costs, and that have fewer people receiving government transfer payments show clear economic advantages over other places. However, these advantages explain only a fraction of the differences in growth among counties. Most variation in growth is accounted for by other factors. These include regional trends and the industrial composition of employment, whose effects are likely to vary from one time period to another.

Other factors contributing to growth are more difficult to quantify or to assess. Some factors are likely to vary in their growth effects depending on other local or regional conditions. While general explanations for earnings growth are important, they leave enough growth unexplained that local initiative may also play an important role among the less quantifiable factors. Development strategies and expectations for their success need to take into account such unquantified local factors, which are likely to include some of the greatest advantages and handicaps of local areas.

References

Kusmin, Lorin D. *Factors Associated with the Growth of Local and Regional Economies: A Review of Selected Empirical Literature*. Staff Report AGES-9405, U.S. Dept. Agr., Econ. Res. Serv., March 1994.

Kusmin, Lorin D., John M. Redman, and David W. Sears. *Factors Associated with Rural Economic Growth: Lessons from the 1980's*. Technical Bulletin No. 1850, U.S. Dept. Agr., Econ. Res. Serv., September 1996.

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